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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,147

04/07/2006

You Moon Jeon

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7284

23413 7590 11/23/2009  
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EXAMINER

KOSACK, JOSEPH R

ART UNIT

PAPER NUMBER

1626

NOTIFICATION DATE

DELIVERY MODE

11/23/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/575,147	<b>Applicant(s)</b> JEON ET AL.	
	<b>Examiner</b> Joseph R. Kosack	<b>Art Unit</b> 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 11-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/26/09, 7/14/09, 10/16/09</u> .                              | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1-7 and 9-13 are pending in the instant application.

#### ***Information Disclosure Statement***

The Information Disclosure Statements filed on May 26, 2009, July 14, 2009, and October 16, 2009 have been considered by the Examiner. The crossed out document on the IDS of July 14, 2009 was not considered because no date was included on the IDS form and no copy of the document was provided to the Office.

#### ***Previous Claim Rejections - 35 USC § 103***

Claims 1-7, 9, and 10 were previously rejected under 35 U.S.C. 103(a) as being unpatentable over van der Slot et al. (*Organometallics*, 2002, 3873-3883) in view of Billig et al. (*Kirk-Othmer Encyclopedia of Chemical Technology*, 1996, "Oxo Process" Pages 1-17).

The declaration by Donghyun Ko and the arguments from the Applicant have been considered, and have been found to be persuasive with respect to the instant ground of rejection. The rejection is withdrawn.

As claim 4 does not read on the searched subject matter, it is withdrawn from further consideration by the Examiner under 37 CFR 1.142(b) as being drawn to a non-elected invention. Claim 4 should not have been included in the previous actions as examined as it has not read on the elected subject matter.

#### ***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

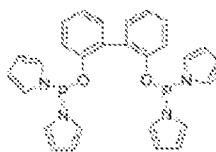
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

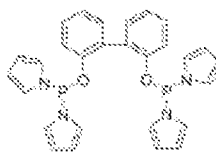
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 5-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gelling et al. (USPN 6,153,800 in view of van der Slot et al. (*Organometallics*, 2002, 3873-3883)

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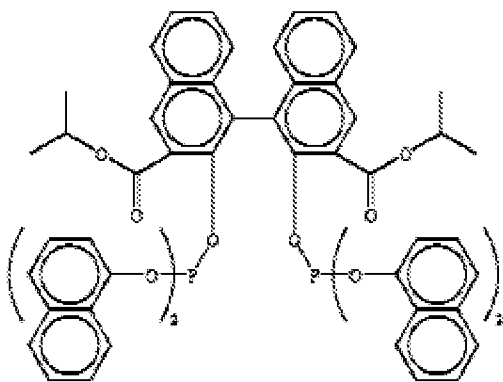
The instant claims are drawn to a catalyst composition comprising a compound of Formula 1 [BPO-P(PyI)<sub>2</sub>], Formula 2, and Formula 3 [Rh(acac)(CO)<sub>2</sub>].



van der Slot et al. teach the composition of  with Rh(acac)(CO)<sub>2</sub> for hydroformylation. See page 3875 and Table 3 on page 3876, especially the top entry.

van der Slot et al. do not teach the use of a monodentate ligand in the catalyst composition or the exact ratios as required by claim 9.

Gelling et al. teach a catalyst composition for hydroformylation with



as the bidentate ligand, tri-(ortho-tolyl)phosphine as a monodentate ligand, and Rh(acac)(CO)<sub>2</sub> as the metal catalyst. See Example 1, columns 10-12. R<sub>3</sub>, R<sub>4</sub>, and R<sub>5</sub> would be substituted phenyl. One of ordinary skill in the art, with respect to the monodentate ligand, would envision replacing the tri-(ortho-tolyl)phosphine with triphenylphosphine as it is a possibility mentioned by Gelling et al. in column 2, lines 47-62.

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Gelling et al. also teach that adding a monodentate ligand to a bidentate ligand catalyst for hydroformylation increases the life significantly of the catalyst, improves selectivity, and protects the bidentate ligand from degradation. See column 1, line 52 to column 2, line 6. This teaching is irrespective of the bidentate ligand used, even though the ligand of Example 1 is preferred.

As to the catalyst ratios, “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)

Therefore, one of ordinary skill in the art would take the catalyst composition of van der Slot et al. and modify it by adding the monodentate ligand of Gelling et al. with a reasonable expectation of success. The motivation to combine the references has been shown above with the teachings of Gelling et al. clearly showing how to improve the lifecycle of the bidentate ligand by adding a monodentate ligand.

### ***Conclusion***

Claims 1-3, 5-7, 9 and 10 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph R. Kosack whose telephone number is (571)272-5575. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph R Kosack/  
Examiner, Art Unit 1626